GUMUSCIAN, B.

Arches with a span of 36.35m for the roofs of plants. p. 3

CONSTRUCTORUL, Bucuresti, Vol 8, No. 327, Apr. 1956

AUTHORS: Shveykin, V. V., Gun, G. Ya.   SOV/163-58-1-26/53

TITLE: On the Change of the Wall-Thickness of Tubes in Reduction
                  (Ob izmenenii tolshchiny stenki truby pri redutsirovanii)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 1,
                  pp 140-145 (USSR)

ABSTRACT: In the present investigation the change of the wall-thickness
                  of tubes is theoretically determined (without determining the
                  moments). The following formulae for the determination of the
                  wall-thickness of the tubes prior to rolling, and of the wall-
                  thickness after rolling were suggested:

$$S_o = S_k \left(\frac{d_o}{d_k}\right)^{-A} \quad (18); \qquad S_k = S_o \left(\frac{d_o}{d_k}\right)^{A} \quad (19).$$

                  The results obtained in the calculation of S_o and S_k agree
                  with the values obtained experimentally.
                  By means of these formulae the wall-thickness desired prior
                  to and after reduction may be calculated, thus saving un-
Card 1/2   necessary work. (Reduction in this sense means rolling without

SOV/163-58-1-26/53

On the Change of the Wall-Thickness of Tubes in Reduction

any straightening device).
There are 1 figure, 1 table, and 3 references, 3 of which are
Soviet.

ASSOCIATION: Ural'skiy politekhnicheskiy institut (Ural Polytechnical
               Institute)

SUBMITTED: October 4, 1957

Card 2/2

AUTHORS: Shveykin, V. V., Gun, G. Ya.   SOV/163-58-2-29/46

TITLE: The Specific Pressure in Stamping of Pipes Without Frames
            (Udel'noye davleniye pri prokatke truby bez opravki)

ABSTRACT: The equation for the determination of the specific pressure
            in the stamping of pipes without frames was suggested:

$$p = \sigma_s\left(\frac{S_o}{d_o} + \frac{S_k}{d_k} \right) , \tag{11}$$

            where σ_s denotes the flow limit, S - the wall thickness of
            the pipe, and S_o - the initial wall thickness.
            By means of this formula the specific pressure was determined
            and then it was compared with the values found experimentally
            by Ya. L. Vatkin. From the values given in the table may be
            seen that the results agree well. The table was compiled un-
            der the consideration of the following parameters:

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The Specific Pressure in Stamping of Pipes
Without Frames

SOV/163-58-2-29/46

Diameter of the roll $D = 260$ mm, length of the roll $L = 350$ mm, $l_k = 55$ mm, $\theta = 30°$. Room temperature and $1050°C$ were employed by the authors.

The determinations by means of the formula mentioned above are the more accurate the thinner the wall of the pipe is. There are 1 figure, 1 table, and 2 references, 2 of which are Soviet.

ASSOCIATION: Ural'skiy politekhnicheskiy institut(Ural Polytechnical Institute)

SUBMITTED: October 1, 1957

Card 2/2

Gun, G. Ya.

25(1) PHASE I BOOK EXPLOITATION SOV/2727

Obrabotka metallov davleniyem; sbornik statey, vyp. 5 (Metal Forming; Collection of Articles, No. 5) Moscow, Metallurgizdat, 1959. 197 p. 3,000 copies printed.

Scientific Ed.: L.Kh. Al'shevskiy, Candidate of Technical Sciences; Ed. of Publishing House: N.A. Valov; Tech. Ed.: A.I. Karasev.

PURPOSE: This collection of articles is intended for technical personnel and scientific workers in the metallurgical and machinery-construction industries.

COVERAGE: This collection of articles deals with problems of rolling and tube manufacture. Results of research done on roll design and new methods of determining basic manufacturing parameters in the production of tubes and other rolled shapes are presented. Methods of analyzing the kinematics of processes in helical piercing mills and rolling mills by means of motion pictures are discussed. Also discussed are several phenomena associated with tube rolling. No personalities are mentioned. References follow several of the articles.

Plyatskovskiy, O.A. [Candidate of Technical Sciences, Vsesoyuznyy nauchno-issledovatel'skiy trubnyy institut (All-Union Scientific Research Institute for Pipe)]. Investigation of the Kinematics of Processes in Helical Piercing Mills by Motion Picture Filming and Other Methods 114

This article deals with industrial and laboratory tests of a method of investigating kinematic processes in rolling by means of motion pictures. The mechanism of the process is discussed, and experiments on piercing and three-high mills are described. Results are shown in tables and diagrams.

Plyatskovskiy, O.A., E.L. Oslon [Candidate of Technical Sciences], and K.O. Bodev [Engineer], [Novotrubnyy zavod (Novotrubnoye Plant)]. Rolling Medium-diameter Stainless Steel Tubes With Increased Rate of Deformation 129

This article deals with an experimental investigation of the use of stainless steel with a high deformation coefficient in piercing processes. Results show an increase in the rate of production and greater economy of materials.

Vatkin, Ya.L. [Candidate of Technical Sciences]; A.A. Shevchenko [Doctor of Technical Sciences]; and I.D. Kronfel'd, S.V. Rozhnov, and I.A. Chekmarev, [Dnepropetrovskiy metallurgicheskiy institut (Dnepropetrovsk Metallurgical Institute), and All-Union Scientific Research Institute for Pipe]. Investigation of Tube Rolling in a Continuous Mill With a Long Mandrel 143

Results of experimental investigations of pass design for a continuous tube-rolling mill are presented. Causes of such tube defects as nonuniformity of wall thickness and defective ends are discussed. Improvements in pass design, mandrel withdrawal, and roll pressure adjustments are suggested as remedies.

Meyerovich, I.M. [Candidate of Technical Sciences], and P.P. Lavrov [Engineer], [TsNIITMASh]. Torque During Tube Rolling in a Continuous Seven-stand Mill 165

Shevakin, Yu.F. [Doctor of Technical Sciences], and G. Ya Gun [Engineer], [Ural Polytechnical Institute]. Analytical Method ~~for Determining~~ Unit Pressure During Tube Rolling Without a Mandrel 175

Bernshteyn, M.M. [Engineer, All-Union Scientific Research Institute for Pipe]. Change in Wall Thickness of Small-size Tubes During Drawing Without a Mandrel 179

A formula is derived for determining changes in wall thickness and outside diameter, amount of reduction, approach angle of the nib, coefficient of friction, and ultimate strength of the material. Another formula for determining initial wall thickness is presented. The formulas are confirmed by experimental data.

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SHVEYKIN, V.V., prof., doktor tekhn. nauk; GUN, G.Ya., inzh.

Changes in tube wall thickness during the process of rotary swaging
without mandrels. Izv. vys. ucheb. zav.; chern. met. 2 no.4:57-64
Ap '59.   (MIRA 12:8)

1.Ural'skiy politekhnicheskiy institut. Rekomendovano kafedroy
obrabotki metallov davleniyem Ural'skogo politekhnicheskogo instituta.
          (Tubes) (Forging)

S/032/60/026/06/27/044
B010/B016

AUTHORS: Mednikov, Yu. A., Gun, G. Ya.

TITLE: The Accuracy of Evaluating the Deformability of the Weld
             Seam of Pipes in Flattening Tests

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 6, pp. 750-753

TEXT: The flattening test on pipe specimens is carried out according to
ГОСТ(GOST) 8695-58 and 1753-53. In this connection the pipes are
flattened up to about 2/3 of the original diameter. The weld seam of the
pipe has to pass vertically to the compressive stress. The deformability
of the weld seams is judged from the cracks occurring on the external
surface of the pipe. A possible destruction of the weld seam on the inner
surface of the pipe is not considered at all. The authors point out that
the true deformability of a weld seam may be determined only after a
universal evaluation of the pipe under load. Furthermore, the thickness
of the pipe wall is not taken into account in GOST 1753-53. The tests
performed in the present study (Table, Figs. 2-5) show that the

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The Accuracy of Evaluating the
Deformability of the Weld Seam of Pipes
in Flattening Tests

S/032/60/026/06/27/044
B010/B016

deformation of the surface layers in pipes with equal diameter vary
considerably with the thickness of the pipe wall. Therefore, the decrease
of the pipe diameter caused by the load must be chosen by considering
the thickness of the wall, when comparing the deformability of a weld
seam. There are 5 figures, 1 table, and 1 Soviet reference.

ASSOCIATION: Chelyabinskiy truboprokatnyy zavod (Chelyabinsk Tube
              Rolling Mill)

Card 2/2

20276
S/148/60/000/009/009/025
A161/A030

I. 1400   1496, 1045, 1454

AUTHORS: Smirnov-Alyayev, G.A., and Gun, G.Ya.

TITLE: An approximate method for the solution of stationary problems
              of viscous-plastic flow in volume

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya,
              no. 9, 1960, 62-67

TEXT: Up to now no accurate solution could be found for the problem
in view of the great mathematical difficulties. The author suggests an
approximate method omitting the minor factors and reducing the problem to
a two-dimensional one. The flow process is analyzed on one of the major
pressure working processes - a prismatic or cylindrical body moving in
axial direction and subjected to plastic deformation in contact with a tool.
An element is separated by two perpendicular sections Ω and Ω_1 (Fig. 1),
with depth dz at the time moment t_0, and the matrix of derived velocity
components V on the rectangular coordinates x, y, and z is considered and
the minor matrix elements are eliminated. The simplifying kinematic hypo-

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20276

An approximate method for the solution...

S/148/60/000/009/009/025
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thesis is that

$$V_z = f(z), \quad \text{or} \quad \frac{\partial V_z}{\partial x} = \frac{\partial V_z}{\partial y} \approx 0 \tag{2}$$

The separated element assumes an absolutely rigid body. The forces and velocities on the surface of the separated element and the external and internal forces are calculated in a system of integral equations. The connection of the velocity V_{z_0} with the velocities V_x and V_y and hence with H_o can be found from the equation (7):

$$\overline{V} \cdot \overline{\nabla F} = \overline{V}_1 \cdot \overline{\nabla F} = \overline{\Delta V} \cdot \overline{\nabla F} = 0 \tag{7}$$

(where $\overline{V}$ are the velocities of the body points, $\overline{V}_1$ - velocities of the tool points, and $\overline{\Delta V}$ - displacements of the body points in relation to the tool in a tangent plane to the surface F) written in scalar form:

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An approximate method for the solution...

S/148/60/000/009/009/025
A161/A030

$$V_x + V_y tg\beta + V_{z_0}' \cdot tg\psi = 0 \qquad (42)$$

The equations system makes possible the construction of a velocities field of body under deformation, and the determination of specific pressure and friction force on the surface. There are 2 figures and 3 Soviet-bloc references.

ASSOCIATION: Leningradskiy voyenno-mekhanicheskiy institut (Leningrad Military Mechanical Institute)

SUBMITTED: 23 February 1960

Card 3/4

S. 88/61/000/001/004/015
AC51/A151

24 4200
1 1350

AUTHORS: Smirnov-Alyayev, G. A., and Gun, G. Ya.

TITLE: Axially symmetric problem of the theory of plastic flow during
the reduction, expansion and drawing of tubes

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy Chernaya metallurgiya,
no. 1, 1961, 89 - 99

TEXT: The authors analyze problems connected with the calculation of
stresses and deformations during the reduction, expansion and drawing of
thin-walled and thick-walled tubes. They use the approximated method which
they developed on the basis of the theory of ductile-plastic flow (Ref. 1:
G. A. Smirnov-Alyayev, G. Ya. Gun, Izvestiya vysshikh uchebnykh zavedeniy,
Chernaya metallurgiya, 1960, no. 9). The authors present first the basic
system of equations for the case of a deformed body with cross section Ω,
representing a ring, limited by the circumferences of radii R_c and r_c (R_c
- radius of the contact contour, r_0 - radius of the free contour), the de-
formed body interacting with the tool over the constant surface $R = R$ (z)
(Fig. 1). Since one of the body surfaces is free, its deformed state is

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Axially symmetric problem of the theory of...

not known beforehand and depends generally on the axial stresses, on the ratio r_0 to R_0 and also on the friction conditions on the surface. The authors, referring to Ref. 1 base their calculation on the incompressibility equation

$$\frac{\partial v_r}{\partial r} + \frac{v_r}{r} + \frac{d v_z}{d z} = 0,$$

where v_r and v_z = radial and axial components of velocity $\overline{V}$. With the aid of a series of integral and differential equations they determine the velocity field and also the specific pressure and friction forces on the part - tool contact surface. Based on the abovementioned system of equations the authors then determine the change in wall thickness for the drawing of tubes without mandrel through a conical die. The importance of this problem is emphasized by the number of theoretical and experimental solutions achieved in this field [Ref. 2: A. Ludenskiy, G. Pishchikov et. al., Stal', 1937, no. 3; Ref. 3: V. I. Karasevich, Tsvetnyye metally, 1948, no. 5; Ref. 4: M. Z. Yermanok. Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya, 1958, no. 4; Ref. 5: V. V. Shveykin, G Ya. Gun. Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, 1959, no. 4.

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S/149/61/000/001/004/015
A033/A133

Ref. 6: M. M. Bernshteyn. Sb. "Obrabotka metallov davleniyem", Metallurgiz-dat, 1959, no. 5; Ref. 7: B. Pochta. Gutnitske Listy, 1955, no. 4; Ref.8: A. A. Il'yushin. Plastichnost' (Plasticity), Gostekhizdat, 1948; Ref. 9: N. F. Lebedev. Inzhenernyy sbornik AN SSSR, v. IV, 1950]. The authors point out, however, that hitherto there has been no solution that did not contain empirical "correcting functions". Nomograms presented by the authors show the solution of calculating the variable parameter v and of determining the change in wall thickness during the drawing of tubes without mandrel de-pending on the ratio of the initial to the final outer radius R_1 to R_2, the degree of thinness of tube walls λ, the coefficient $9 = 1 + \mu ctg\psi$, charac-terizing the tool shape and friction conditions. An analysis of the ex-perimental and theoretical curves shows a fully satisfactory coincidence: the mean deviation does not exceed some percents. Fig. 6 shows the defor-mation of thin-walled tubes: a) - drawing of tubes, b) - reduction of tubes, c) and d) expansion of tubes. As a concrete example the authors present a derivation of the formula for the calculation of the wall thick-ness for the drawing of tubes without mandrel. There are 6 figures and 9 Soviet-bloc references.

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A033/A133

Axially symmetric problem of the theory of....

ASSOCIATION: Leningradskiy voyenno-mekhanicheskiy institut (Leningrad
Military-Mechanical Institute)

SUBMITTED: February 23, 1960

Card 4/4

SMIRNOV-ALYAYEV, G.A.; GUN, G. Ya.

Theory of longitudinal rolling. Izv.vys. ucheb. zav.; chern. met.
no.3:108-118 '61.   (MIRA 14:3)

1. Leningradskiy voyenno-mekhanicheskiy institut.
(Rolling(Metalwork))

S/148/62/000/006/002/005
E081/E435

AUTHORS: Polukhin, P.I., Gun, G.Ya., Masterov, V.A.,
Knyshev, Yu.V.

TITLE: Calculation of the stresses and strains during the
pressing of layered bodies

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya
metallurgiya, no.6, 1962, 71-75

TEXT: The problem considered is the pressing out between dies of
a material consisting of n layers of different substances (Fig.1)
taking into account hardening, friction between the layers,
and shear forces in the external zone.   The work corresponding to
the two latter effects is evaluated and, using the method of
undetermined multipliers, formulae are derived which enable the
specific pressure and the state of strain in the material to be
calculated.   A nomographic method of accomplishing the
calculations is outlined.   There are 2 figures.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: January 10, 1962

Card 1/2

POLUKHIN, P.I.; MASTEROV, V.A.; GUN, G.Ya.

Theoretical investigation of the longitudinal rolling process
with widening of the smooth barrel. Izv. vys. ucheb. zav.;
chern. ... .-.. .5:99-107 '62.   (MIRA 15:6)

1. Moskovskiy institut stali.
(Rolling (Metalwork))

POLUKHIN, P.I.; MASTEROV, V.A.; GUN, G.Ya.

Experimental verification of basic design equations of the process
of longitudinal rolling with increase in width. Izv. vys. ucheb.
zav.; tsvet. met. 5 no.4:157-168 '62.   (MIRA 16:5)

1. Moskovskiy institut stali, kafedra prokatki i Leningradskiy
mekhanicheskiy institut, kafedra obrabotki metallov davleniya.
                        (Rolling (Metalwork))

POLUKHIN, P, I.; MASGEROV, V.A.; GUN, G, Ya,

    Effect of external parts on an increase in width during longitudinal
rolling. Izv. vys. ucheb. zav.; tsvet. met. 5 no.5:141-144 '62.

                                  (MIRA 15:10)

    1. Moskovskiy institut stali, kafedra prokatki.
        (Rolling (Metalwork))   (Deformations (Mechanics))

POLUKHIN, P.I.; GUN, G.Ya.; MASTEROV, V.A.; KNYSHEV, Yu.V.

Calculating forces and deformations in the reduction of laminated
solids. Izv.vys.ucheb.zav.; chern.met. 5 no.6:71-75 '62.
(MIRA 15:7)

1. Moskovskiy institut stali.
                (Laminated metals)   (Forging)

POLUKHIN, P.I.; MASTEROV, V.A.; GUN, G.Ya.

Effect of external parts on the widening and specific pressures during longitudinal rolling and upsetting. Izv. vys. ucheb. zav.; chern. met. 5 no.8:57-61 '62.   (MIRA 15:9)

1. Moskovskiy institut stali isplavcv i Leningradskiy mekhanicheskiy institut.
    (Rolling (Metalwork))   (Deformations (Mechanics))

POLUKHIN, P.I.; GUN, G.Ya.; MASTEROV, V.A.

Calculated equation of the process of rolling with increase in width applying the law of plastic friction $\tau = \mu \cdot p$. Izv. vys. ucheb. zav.; chern. met. 5 no.9:116-124 '62.   (MIRA 15:10)

1. Moskovskiy institut stali i splavov i Leningradskiy mekhanicheskiy institut.

(Rolling (Metalwork))

S/148/62/000/009/004/007
E081/E535

AUTHORS: Smirnov-Alyayev G.A. and Gun G. Ya.

TITLE: The theory of finite plastic deformation of a sheet
material $\sqrt{\cdot v_5}$

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya
metallurgiya, no.9, 1962, 150-154

TEXT: The general results are described of investigation
of the deformed state by means of variational methods. Applying
the current assumptions of the theory of shells, without assuming
the magnitude of the strain to be small, formulae are derived
which determine the main components and the main directions of
strain.   The strains ε_1, ε_2, ε_3 in the sheet are defined by
considering an elementary sphere of radius ρ in the material;
under the stress system applied for time t, the sphere becomes an
ellipsoid with semi-axes b_1, b_2, b_3, and the strains are given by

$$\varepsilon_1 = \ln \frac{b_1}{\rho} \; ; \quad \varepsilon_2 = \ln \frac{b_2}{\rho} \; ; \quad \varepsilon_3 = \ln \frac{b_3}{\rho} \qquad (1)$$

It is assumed that the Kirchoff-Love hypothesis applies, and on
Card 1/3

The theory of finite plastic ...   S/148/62/000/009/004/007
                                                E081/E535

this basis the distortions and the strains in the sheet are expressed in differential form. The specific strain energy A is given by

$$A = \int_0^{\varepsilon_i} \sigma_i \, d\varepsilon_i \tag{12}$$

where σ_i and ε_i are stresses and strains defined in terms of the principal stresses and strains. Assuming a power law relation between stress and strain

$$\sigma_i = B \, \varepsilon_i^m \; ; \qquad A = \frac{B \, \varepsilon_i^{m+1}}{m + 1} \tag{13}$$

the Lagrange variational equations are applied to obtain formulae which yield a theoretical solution for the deformed state of the sheet. A procedure is outlined for solving practical problems which in the general case can be formulated as follows: The initial shape of the die, the mechanical properties of the material and the boundary conditions (method of clamping the edges, conditions of friction on the surface, displacement of the Card 2/3

The theory of finite plastic ...   S/148/62/000/009/004/007
                                      E081/E535

tool etc.) are known and from these the final deformed shape
as well as the required forces and the energy consumption have
to be determined. Alternatively, the problem may be the inverse
one, namely, of determining the shape and dimensions of the die
from the final shape of the component. Subsequent papers will
be published in which this method of solution will be applied to
a number of concrete problems of the theory of finite plastic
deformations of sheet material.   There is 1 figure.

ASSOCIATION: Leningradskiy voyenno-mekhanicheskiy institut
               (Leningrad Military-Mechanical Institute)

SUBMITTED: May 26, 1961

Card 3/3

SMIRNOV-ALYAYEV, G.A.; GUN, G.Ya.

Principles of the theory of continuous forming on shape bending machines. Izv.vys.ucheb.zav.; chern.met.   5 no.11:99-105 '62.
(MIRA 15:12)

1. Leningradskiy mekhanicheskiy institut.
(Sheet-metal work)

TARNOVSKIY, I.Ya.; POZDEYEV, A.A.; KOLMOGOROV, V.L.; VAYSBURD,
        R.A.; GUN, G.Ya.; KOTEL'NIKOV, V.F.; TARNOVSKIY, V.I.;
SKOROKHODOV, A.N.

[Variational principles of mechanics in the theory of metal-
working by pressure] Variatsionnye printsipy mekhaniki v teo-
rii obrabotki metallov davleniem. Moskva, Metallurgizdat,
1963. 52 p.   (MIRA 17:5)

GUN, G.Ya.; POLUKHIN, P.I.

Plastic flow in a polygonal strip of material undergoing hardening.
Report no. 1. Izv. vys. ucheb. zav.; chern. met. 6 no.6:81-87
'63.   (MIRA 16:8)

1. Leningradskiy mekhanicheskiy institut i Moskovskiy institut
stali i splavov.
                          (Deformations (Mechanics))

GUN, G.Ya.; POLUKHIN, P.I.

Conformal transformation and variational methods in the pressure metalworking theory. Izv. vys. ucheb. zav.; chern. met. 6 no.5: 97-105 '63.   (MIRA 16:7)

1. Leningradskiy mekhanicheskiy institut i Moskovskiy institut stali i splavov.
            (Rolling (Metalwork)) (Drawing (Metalwork))

GUN, G.Ya.; POLUKHIN, P.I.

Plastic flow of a hardener material in a multiangular strip. Izv.
vys. ucheb. zav.; chern. met. 6 no.7:91-95 '63.   (MIRA 16:9)

1. Leningradskiy mekhanicheskiy institut i Moskovskiy institut
stali i splavov.
        (Metals—Hardening) (Deformations (Mechanics))

GUN, G.Ya.; POLUKHIN, P.I.

Some problems of plastic flow in a polygonal strip. Izv. vys.
ucheb. zav.; chern. met. 6 no.8:85-92 '63.   (MIRA 16:11)

1. Leningradskiy mekhanicheskiy institut i Moskovskiy institut
stali i splavov.

GUN, G.Ya. (Leningrad):

"On the application of conformal mapping in the theory of plastic flow."

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

GUN, G.Ya.; POLUKHIN, P.I.

Conformal representation in the theory of smoothly changing plastic flow. Report No.2. Izv. vys. ucheb. zav.; chern. met. no.9:68-73 '64.   (MIRA 17:6)

1. Leningradskiy mekhanicheskiy institut i Moskovskiy institut stali i splavov.

SHVEYKIN, V. V.; GUN, G. Ya.; IVSHIN, P. N.

Stability of the cross sectional shape of a pipe during reduction.
Izv.vys.ucheb.zav.; chern.met. 7 no. 4:88-92   '64. (MIRA 17:5)

1. Ural'skiy politekhnicheskiy institut.

GUN, G. Ya.; POLUKHIN, P. I.

Theory of smoothly changing plastic flows. Izv. vys. ucheb. zav.;
chern. met. 7 no. 5:69-74 '64.   (MIRA 17:5)

1. Moskovskiy institut stali i splavov.

GUN, G. Ya.; POLUKHIN, P.I.

Conformal transformation in the theory of a smoothly changing
plastic flow. Report no.1:Izv. vys. ucheb. zav.; chern. met.
7 no.7:90-95 '64   (MIRA 17:8)

1. Leningradskiy mekhanicheskiy institut i Moskovskiy institut
stali i splavov.

L 36295-65   EWT(d)/EWT(m)/EWA(d)/EW(r)/EWP(k)/EWP(h)/MP(b)/EWP(1)/
EWA(c)   Pf-4   JD/HW

ACCESSION NR: AP4047336   S/0148/64/000/010/0070/0074

AUTHOR: Gun, G. Ya.; Polukhin, P. I.; Prudkovskiy, B. A.; Polukhin, V. P

TITLE: Certain problems pertaining to the theory of extrusion in unsymmetrical
and multihole dies
SOURCE: IVUZ. Chernaya metallurgiya, no. 10, 1964, 70-74

TOPIC TAGS: velocity field, plastic flow, interface, deformation, multihole die,
unsymmetrical die, extrusion, extrusion die

ABSTRACT: In plotting a flat turbulent-free field of velocities determined by an
analytical function, the complex potential $\omega(z)$, the physical region D of the plas-
tic flow and region E of the complex potential are mapped conformally in the up-
per half-plane. Assuming that region D is a generalized polygon A with apexes
A_k and with angles $\alpha_k \pi$ $(0 \leq \alpha_k \leq 2)$ the auxiliary half plane $Im \zeta > 0$ is introduc-
ed and regions D and E plotted on it. The pressure efficiency is written as the
sum of pressure efficiencies in the first and the second hole and the shear force
on the flow interface is added. The flow interface in the first and second hole

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L 36295-65
ACCESSION NR: AP4047336

may be derived from the minimum forming efficiency which, in turn, determines
the relationship of outflow from the first and second holes. In polygonal regions,
the flow in multi-hole dies is determined by using the method of discontinuous
functions. Let plastic flow occur in an nonsymmetrical die in region D, having
assigned parameters H, h, C_1 and C_2. The flow in region D may be considered
as a flow in two simpler regions I and II, attached along current line A^-A^+ which
is the flow interface. The flow interface contains section A_8A_4 where disconti-
nuous velocities occur along that interface. The region of intensive plastic de-
formations is bounded by equipotential surfaces that pass through angle points and
by a surface determined by angle ψ. Let us limit the zones of intensive plastic
deformations in regions I and II corresponding to surfaces $A_1A_2A_3A_8$ and
$A_4A_5A_6A_7$. The discontinuity in velocities will be considered only for section
A_8A_4 of the flow interface. The mean specific pressure is written

$$\frac{p}{2\tau_s} = \frac{A}{2\tau_s \sigma_\infty (H_1 + H_2)} = \frac{H_1}{H_1 + H_2}\left[\left(1 + \frac{1}{\psi_1}\right) \cdot \ln\frac{H_1}{h_1} + 0.88\psi_1\right] + $$
$$+ \frac{H_2}{H_1 + H_2}\left(\ln\frac{H_2}{h_2} + 0.88\psi_2\right). \qquad (1)$$

Card 2/5

L 36295-65
ACCESSION NR: AP4047336

Functional (1) stands in linear relationship with ψ_ℓ. Its minimum value corresponds to the value of ψ_2^0 at which equipotential surface A_6A_7 becomes equipotential surface B_3B_2 forming a common area of deformation. Orig. art. has: 3 figures and 18 equations.

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Steel and Alloy Institute)

SUBMITTED: 21Mar64   ENCL: 02   SUB CODE: MM

NR REF SOV: 004   OTHER: 000

Card   3/5

GUN, G.Ya.; POLUKHIN, P.I.

Using analytical functions in plane problems of plastic flow.
Izv. vys. ucheb. zav.; chern. met. 7 no.11:81-88 '64.

(MIRA 17:12)

1. Leningradskiy mekhanicheskiy institut i Moskovskiy institut
stali i splavov.

POLUKHIN, P.I.; FOLUKHIN, V.P., NIKOLAYEV, V.A.: OKT, G.Y.

Polarization optical method of investigating contact stresses
in the rolling process. Izv. vys. u.heb. zav.: hern. met. 7
no.12:52-58 '64
(MIRA 18:1)

1. Moskovskiy institut stali i splavov.

BERKOVSKIY, V.S.; GUN, G.Ya.; KRAKHT, V.B.; KRAKHT, N.G.

Investigating plastic flow in passes in conditions of plain
strain. Izv.vys.ucheb.zav.; chern. met. 8 no.1:123-127 '55.
(MIRA 18:4)

1. Moskovskiy institut stali i splavov.

POLUKHIN, P.I.; GUN, G.Ya.; POLUKHIN, V.P.; PRUDKOVSKIY, B.A.; KOROLEV, V.M.

Using the method of electrohydrodynamic analogies in the theory of metalworking by pressure. Izv. vys. ucheb. zav.; chern. met.
8 no.5:57-64 '65.
(MIRA 18:5)

1. Moskovskiy institut stali i splavov.

L 2999-66   EWT(m)/EWP(t)/EWP(b)   JD
ACCESSION NR: AP5013321

AUTHOR: Polukhin, P. I.; Gun, G. Ya.; Polukhin, V. P.; Prudkovskiy, B. A.;
Korolev, V. M.

TITLE: Adaptation of the electrohydrodynamic analogue method to the theory of
metal processing under pressure

SOURCE: IVUZ. Chernaya metallurgiya, no. 5, 1965, 57-64

TOPIC TAGS: plastic flow, mathematic model, metallurgic process, pressure casting

ABSTRACT: The application of the theory of complex variables to plastic flow dur-
ing metal processing was studied by the mathematical modeling of potential fields.
In particular, the method of electrohydrodynamic analogues was found to be directly
applicable to metal processing theory. Three specific cases are considered: the
general theory of plane-parallel plastic flow, the drawing of profiles of intri-
cate form, and the pressing of profiles of intricate form. Plastic flow equations
are given for plane-parallel flow in terms of complex variables, utilizing a mathe-
matically postulated Q-plane, which allowed approximate calculations to be made for
the energy and strength parameters of the process. The flow pattern is presented,
Card 1/2

L 2999-66

ACCESSION NR: AP5013321

along with a parametric plot of the Q-plane. For the case of the drawing of intri-
cate shapes, a similar approach was given. A deformation function $\phi = \phi(x, y)$ is
used to calibrate a draw plate; this function is determined by solving a Laplacian
in x and y for specified boundary conditions. Results are given for $1-\phi$, calcu-
lated at the center of the draw plate, as a function of degree of deformation. For
the final case, pressing of profiles of intricate shape, a further innovation is
made in the general mathematical treatment, by using

$$v = v_x + i v_y$$

to describe the velocity field. A complex potential is calculated, and the flow
behavior of a thin walled pressing is described. Flow lines are sketched and shown
to be equivalent to those obtained during metal processing. Orig. art. has: 6
figures.

ASSOCIATION: Moskovskiy institut stali i splavov (Moscow Institute of Steel and
Alloys)

SUBMITTED: 22Jan65   ENCL: 00   SUB CODE: MM, ME

NO REF SOV: 009   OTHER: 000

Card 2/2

GUN, G.Ya.; POLUKHIN, P.I.; PRUDKOVSKIY, E.A.; POLUKHIN, V.P.; YERMANOK, M.Z.

Calculating strain hardening and the temperature field
during extrusion. Izv. vys. ucheb. zav.; tsvet. met. 8
no.4:134-139 '65.   (MIRA 18:9)

1. Kafedra tekhnologii i avtomatizatsii prokatnogo proizvodstva
Moskovskogo instituta stali i splavov.

POTAPOV, A.S., starshiy nauchnyy sotr.; DEDOV, A.G., mladshiy nauchnyy
sotr.; USTINOVA, N.A., mladshiy nauchnyy sotr.; GUN, K.K., red.

[Chemical and rubber industry of capitalist countries] Khimicheskaia
i rezinovaia promyshlennost' kapitalisticheskikh stran; statisticheskii
sbornik. Moskva, Nauchno-issl. in-t tekhniko-ekon. issledovanii, 1960.
205 p.   (MIRA 14:10)

1.Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po khimii.
(Chemical industries—Statistics) (Rubber industry—Statistics)

GUN, L.

Establishing grain receiving stations in remote grain producing
regions. Muk.-elev. prom. 27 no.2:10-12 F '61.   (MIRA 14:4)

1. Glavnyy inzhener Novosibirskogo upravleniya khleboproduktov.
    (Novosibirsk Province--Grain elevators)

GUN, L., inzh.

Automatic control of dryer furnaces converted to liquid fuel.
Muk.-elev. prom. 28 no.12:14-15 D '62.   (MIRA 16:1)

1. Novosibirskoye upravleniye khloboproduktov.
                              (Grain--Drying)

GUN, L.; KRSHEMINSKIY, V.; BLOKHIN, P.; DUNDUK, I., kand.tekhn.nauk; TULER, A.

Shaft recirculation grain dryer at the Kochnevo Grain Receiving
Station. Muk.-elev. prom. 29 no.3:6-8 Mr '63.   (MIRA 16:9)

1. Glavnyy inzh. Novosibirskogo upravleniya khleboproduktov (for
Gun). 2. Direktor Sibirskogo filiala Vsesoyuznogo nauchno-isledo-
vatel'skogo instituta zerna i produktov yego pererabotki (for Krshe-
minskiy).

YAKOVENKO, D.K.; GUN, M.G.; POPOV, T.I.; POHKRATOV, N.P.

The ShPS-1 grinder for mosaic panels [Suggested by D.K. IAkovenko
and others] Rats. i izobr. predl. v stroi. no.6:119-121 '58.
                    (Grinding machines)   (MIRA 11:10)

YAKOVENKO, D.K.; GUN, M.G.: POPOV, T.I.: PONKRATOV, N.P.

The ShPS-2 grinder for mosaic sills and steps. [Suggested by
D.K. IAkovenko and others] Rats. i izobr. predl. v stroi.
no.6:122-125 '58.   (MIRA 11:10)
              (Grinding machines)

GUN, M.G., inzh.; SALENKOV, Yu.S., inzh.; TROUPYANSKIY, B.F., kand. tekhn. nauk

Modernizing multiple molds at the Kharkov Housing Construction Combine. Bet. i zhel.-bet. 9 no.3:112-114 Mr '63.
(MIRA 16:4)

1. Khar'kovskiy domostroitel'nyy kombinat (for Gun, Salenkov).
2. Khar'kovskiy inzhenerno-stroitel'nyy institut (for Troupyanskiy).
(Kharkov—Concrete plants)

PA 9T57

GUN, R. B.

USSR/Petroleum - Cracking   Jun 1947
        Petroleum - Fractionating

"Reconstructing the Cracking Plant of the Vinkler-
Kokh Type," R. B. Gun, 8 pp

"Neftyanoye Khozyaystvo" Vol 25, No 6

Drawings show the technological scheme of the new
Vinkler-Koth type plant. Tables show percentages
of various fractionation products. Subject type
is said to be widely used in the USSR.

9T87

AUTHORS: Gun, R. B. and Bakutkin, A. B.   SOV/65-58-5-11/14

TITLE: Indicating the Level in Oxidation Stills of a Bitumen
             Plant with the Aid of Radioactive Isotopes
             (Signalizatsiya urovnya v kubakh-okislitelnykh bitumnoy
             ustanovki pri pomoshchi radioaktivnykh izotopov)

PERIODICAL: Khimiya i Tekhnologiya Topliv i Masel, 1958, Nr. 5,
             pp. 60 - 63. (USSR).

ABSTRACT: The change- over from the manual method of measuring
             the level in oxidation stills to an automatic distanc-
             ing indicator was investigated. Two methods were in-
             vestigated on the oxidation still CIB-AHI.: (1) with the aid
             of the radioactive isotope Co^{60} (with the new contact-
             less method), (2) with the aid of a thermocouple and a
             potentiometer to register the temperatures. A modified
             method using one radiation source, two measuring devices,
             and one thermocouple is discussed. It was found necessary
             to define the zones of sensitivity with a gamma relay
             when working with the radioactive isotope Co^{60}. Details
             are given of the fixing of the gamma relay on one of
             the oxidation stills of the bitumen plant of the Moscow
             NPZ. When the radioactive isotope Co^{60} was used it was
             found that the zone of sensitivy varied between 35 - 300cm.

Card 1/3

SOV/65-58-5-11/14

Indicating the Level in Oxidation Stills of a Bitumen Plant with the
Aid of Radioactive Isotopes.

From Table 1 it can be seen that an increase in the
difference of the signals between the source and the
measuring device increases the error in defining the
level. During experiments with a thermocouple, the latter
was used for measuring the temperature of the product
during the oxidation of gudron; results of two ex-
periments are given in Fig.2. The advantages of the second
method lies in the fact that the temperature is registered
continuously, and by calculating the time elapsed after
stabilisation of the temperature it is possible to de-
fine the actual level of the product in the still; this
is not possible when using the first method. Three
modifications of the first method are compared. In the
first modification, the gamma relay is divided into two
blocks (Fig.3); in the second, the measuring device is
mounted together with the relay (Fig.4), and in the
third, the measuring device STS is assembled in a small
box, and fixed on the still. The cost of both methods
is calculated. The gamma relay PR-500, RK-50 and the
thermocouples TKhA and EPP-09 were u s e d during the
investigations. Both methods satisfied industrial

Card 2/3

SOV/65-58-5-11/14

Indicating the Level in Oxidation Stills of a Bitumen Plant with
the Aid of Radioactive Isotopes.

requirements, and are of practically equal importance.
There are 5 Figures, 1 Table, 1 Soviet reference.

ASSOCIATION: SKB ANN

Card 3/3

SOV/65-59-7-11/12

AUTHOR: Gun, R.B.

TITLE: Group Chemical Composition of Oxidized Bitumens
(Gruppovoy khimicheskiy sostav okislennykh bitumov)

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1959, Nr 7,
pp 51-59 (USSR)

ABSTRACT: The author states that no investigations have dealt with
oxidized bitumens from sulphur-containing oils under the
conditions of their industrial production. The object
of the work described was to fill this gap. The
materials were oxidized bitumens of various grades made at
the Ufimskiy neftezavod   (Ufa , Oil Works). The bitumens
were made from 30% petroleum asphalt from Tuymazy   oil;
they were oxidized on the bitumen plant at 250 °C. The
physico-chemical properties and group composition of the
asphalt and of the oxidized bitumens were determined by
the Markusson (Groz NII) (Ref 5) and the Bestuzhev-
Bargman (Ref 1) methods. The results are compared in
Fig 2. Fig 1 shows the dependence of these properties on
temperature while Figs 3 and 4 show the corresponding
changes in composition. The group chemical composition
of the oxidized bitumens is shown in Fig 5. The nature

Card 1/2

SOV/65-59-7-11/12

Group Chemical Composition of Oxidized Bitumens

and properties of the various materials are shown in tables. It was found that in high-melting bitumens the stretchability and depth of needle penetration fall sharply with increasing asphaltene content. The Bestuzhev-Bargman method gives considerably lower results for asphaltene determinations than that of Markusson. With increasing oxidation the molecular weight and degree of unsaturation with hydrogen of asphaltenes rise, the C : H ratio remains almost constant and the relative oxygen content falls. As oxidation of asphalt proceeds the quantity of normal paraffin hydrocarbons remains almost unchanged; the contents of naphthene and aromatic hydrocarbons in maltenes falls and the asphaltene content of the bitumen rises. The work confirmed the asphaltene-formation mechanism as proceeding from naphthenes and aromatics through tars. There are 5 figures, 7 tables and 15 references, 9 of which are Soviet and 6 English.

Card 2/2

ASSOCIATION: SKB-ANN

GUN, R. B., Cand Tech Sci (diss) -- "Investigation of the production of oxidized

petroleum bitumen". Moscow. 1960. 9 pp (Min Higher and Inter Spec Educ

RSFSR, Moscow Order of Labor Red Banner Inst of the Petroleum-Chem and Gas

Industry im I. M. Gubkin, Clair of the Tech of Petroleum and Gas), 170 copies

(KL, No 15, 1960, 134)

PHASE I BOOK .PLOITATION   SOV/5279

Gun, Rudol'f Borisovich, and Moisey Borisovich Rybak

Kompleksnaya avtomatizatsiya ustanovok vtorichnoy peregonki (Com-
  plex Automation of Redistillation Plants) Moscow, Gostoptekhizdat,
  1960. 74 p. 3,000 copies printed.

Scientific Ed.: N. A. Korobtsova; Tech. Ed.: E. A. Mukhina.

PURPOSE: This booklet is intended for technical personnel in
  oil refineries, chemical, and petrochemical plants. It will
  also be of interest to workers in design offices and planning
  organizations, and engineers and technicians concerned with the
  use of control and measuring instruments.

COVERAGE: The booklet describes control and regulation systems
  for Soviet petroleum redistillation plants, and analyzes the
  operation of these systems. Results from experimental and re-
  search work on the interdependence of process conditions and the
  physicochemical properties of stock as well as finished and

Card 1/4

Complex Automation (Cont.)   SOV/5279

semifinished products are presented. A new automation and
regulation scheme, developed by the **SKB-ANN** (Special Design
Office of ANN), is proposed and described along with new control
and regulation equipment. An estimate of the industrial and
economic effect resulting from the overall automation of a
redistillation plant is made. No personalities are mentioned.
There are 6 references: 5 Soviet, and 1 English.

TABLE OF CONTENTS:

Card 2/4

GUN, R.B., konstruktor, CHAIKO, A.L., konstruktor

Automatic control of an electric desalter. Neftianik 5 no.1:14-17
Ja '60.
(MIRA 13:11)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v nefte-
pererabotke i proizvodstve iskusstvennogo zhidkogo topliva.
    (Petroleum refineries--Equipment and supplies)
                (Automatic control)

GUN, R.; CHAYKO, A.

Automatic control of pressure gradients. Neftianik 6 no.1:18 Ja '61.
(MIRA 14:4)

(Oil refineries—Equipment and supplies)

SMIRNOV, N.P.; GUN, R.B.; RYBAK, M.B.

Controlling the temperature of a rectification column bottom.
Neftianik 6 no.5:21-22 My '61.   (MIRA 14:5)

1. Zamestitel' glavnogo inzhenera Novo-Ufimskogo nefteperera-
batyvayushchego zavoda (for Smirnov). 2. Spetsial'noye konstruktor-
skoye byuro po avtomatike v neftepererabotke i neftekhimii (for
Gun, Rybak).

(Plate towers)

SMIRNOV, N.P.; GUN, R.B.; RYBAK, M.B.

Regulation of the level of the product in the bottom of a tower.
Neftianik 6 no.7:15-16 Jl '61.   (MIRA 14:7)

1. Zamestitel' glavnogo inzhenera Novo-Ufimskogo neftepereraba-
tyvayushchego zavoda (for Smirnov). 2. Sotrudniki Spetsial'nogo
konstruktorskogo byuro po avtomatike v neftepererabotke i neftekhi-
mii (for Gun, Rybak).
                    (Distillation apparatus)

YAKUSHEV, F.N., starshiy inzh.; GUN, R.B.; CHAYKO, A.L.

Automatic control in the desalting of oil. Neftianik 6
no.8:14-16 Ag '61.   (MIRA 14:10)

1. Chernikovskiy neftepererabatvyayushchiy zavod (for Yakushev).
2. Sotrudniki Spetsial'nogo konstruktorskogo byuro po avtomatike
v neftepererabotke i neftekhimii (for Gun, Chayko).
        (Petroleum--Refining)   (Automatic control)

GUN, K.B.; RYBAK, M.B.

Applying cascade automatic control systems to the redistillation
unit at the Novoufimka Petroleum Refinery. Khim.i tekh.topl.
i masel 6 no.9:48-50 S '61.   (MIRA 14:10)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v neftepererabotke
i neftekhimii.
          (Petroleum refineries---Equipment and supplies)
                    (Automatic control)

GUN, R.B.; RYBAK, M.B.

Automatic control of apecific gravity in a flow. Khim.i tekh.
topl.i masel 7 no.5:60-65 My '62.   (MIRA 15:11)

1. Spetsial'noye konstruktorskoye byuro avtomatizatsii neftepererabotki
i neftekhimii.
                (Petroleum products)   (Specific gravity)

GUN, R.B.

All-Union conference on the automatic control of petroleum re-
fining processes. Khim. i tekh. topl. i masel 7 no.10:70-72
0'62
(MIRA 15:7)

GUN, R.B., kand.tekhn.nauk

Automatic control of production processes in petroleum refineries.
Mekh.i avtom.proizv. 16 no.7:1-6 Jl '62.   (MIRA 15:8)
(Automatic control) (Petroleum-.Refining)

GUN, R.B.

Automation of petroleum refineries. Biul.tekh.-ekon.inform.Gos.nauch.-issl. inst.nauch. i tekh.inform. no.7:9-16 '62.   (MIRA 15:7)
          (Petroleum refineries)   (Automation)

GUN, R.B.; BIRYUKOV, V.V.

New cascade system for controlling the performance of the vacuum
furnace. Neftianik 8 no.2:26-27 F '63.   (MIRA 16:10)

1. Sotrudniki Spetsial'nogo konstruktorskogo byuro avtomatizatsii
neftepererabotki i neftekhimii.

EN, R.B.

Technological and economic effect of the use of a plant chromatograph in a system of automatic control and regulation. Nefteper. i neftekhim. no.1:42-44 '64.   (MIRA 17:6)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v neftepererabotke i neftekhimii.

KOZLOV, I.A.; GUN, R.P.

Remote control of pumps of petroleum enterprise reservoirs.
Mash. i neft. obor. no.6:27-31 '64.   (MIRA 18:2)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v
neftepererabotke i neftekhimii.

VASSERMAN, L.K., inzh.; GUN, R.B., kand. tekhn. nauk

Efficiency of the automation of petroleum refineries. Mekh.
i avtom. proizv. 18 no.7:34-36 Jl '64.   (MIRA 17:9)

GUN, R.B.

Using automatic control computers in petroleum refining and petro-
chemistry. Nefteper. i neftekhim. no.6:51-52 '65.   (MIRA 18:7)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v neftepererabotke
i neftekhimii.

BELOZERSKIY, S.S.; GUN, R.B.; BIRYUKOV, V.V.; KOGAN, Yu.S.

New flow diagrams for the automatic control of simple rectifica-
tion columns. Nefteper. i neftekhim. no.5:43-45 '65.   (MIRA 18:7)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v nefte-
pererabotke i neftekhimii.

BELOZERSKIY, S.S.; GUN, R.B.

Requirements for petroleum refining and petrochemical
equipment and apparatus in connection with overall
automation. Mash. i neft.obor. no.11:31-32 '64.
(MIRA 19:1)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v nefta-
pererabotke i neftekhimii.

GUN, R.B.; BIRYUKOV, V.V.; BOLDOVA, I.P.; YATSKEVICH, G.L.

Automatic control of an assembly of a regeneration unit
for the adsorption purification of liquid paraffins.
Mash. i neft. obor. no.11:33-37 '64.

(MIRA 19:1)

1. Spetsial'noye konstruktorskoye byuro po avtomatike v nefte-
pererabotke i neftekhimii.

PEKAR', P.P., starshiy nauchnyy sotrudnik; SHEVCHENKO, L.A. (Bobrinets)
GUN, S.I. (Genichesk); RYBINA, N.A. (Novo-Ukrainka);
PASECHNIKOVA, I.G. (Bereznigovatoye); MATVEYEVA, Ye.M.
(ARBUZINKA); PODOL'SKIY, L.G. (Starokazatskoye); GRISHAYEVA,
A.P. (Peschanoye); PYATOVA, A.S. (Varvarovka)

Efficacy of artificial pneumothorax in pulmonary tuberculosis
patients under rural conditions. Probl. tub. no.8:71-75'62.
(MIRA 16:9)

1. Iz Odesskogo nauchno-issledovatel'skogo instituta tuberku-
leza (dir. - starshiy nauchnyy sotrudnik M.A.Yerusnikin).

GUNA, Joze (Trbovlje)

Results of the introduction of the statistical methods of quality control
in Machine Factory Trbovlje. Nova proizv 12 no.4-5-6:275-277 D '61.

VISAN, A.; SATMARI, C.; PETRUSCA, J.; STANCU, Al.; BRONITKI, A.; ROTSCHILD, L.;
PIROHCOF, M.; GUNA, S.

Effectiveness of anti-influenza vaccinations. Stud. cercet. infra-
microbiol., Bucur. 8 no.1:57-69 1957.
        (INFLUENZA, prevention & control
            vacc., effectiveness of German polyvalent vaccine & Rumanian
            monovalent vaccine)
        (VACCINES AND VACCINATION
            influenza vacc., effectiveness of German polyvalent & Rumanian
            monovalent vaccines)

GUNAR, I. I.

Chemical agents for combating weeds   Moskva, Gos. izd-vo sel'khoz. lit-ry,
1952.   142 p.

SB611.G3

GUNAR, I.

Plants, Effect of Insecticides on

Wonderful substances. Mol. kolkh. 19, No. 5, 1952.

G. M. Kosolapoff

Carbonic anhydrase in plants. I. I. Gunar and K. E. Krastina (K. A. Timiryazev Agr. Acad., Moscow). *Doklady Akad. Nauk S.S.S.R.* **83**, 161–4(1952).—Tests with leaves of many common plants for a study of variation of the activity of the enzyme under various conditions revealed the following relations. In most cases the activity is higher in upper, younger leaves. Treatment of the plant with isopropylphenylcarbamate which retards photosynthesis and respiration, causes inactivation of the enzyme and the effect is greatest with younger plants. The effect is max. after 24 hrs. Chloroacetanilide, 1-naphthylthiourea, thiourea, and urea give similar results. Carbonic anhydrase was detected even in the roots of corn and peas; this enzyme has the same characteristics. Enzyme from dicotyledonous plants is not affected by carbamates; this is true also of the plant behavior in this family as well, since the plant growth is not affected by the carbamates.   G. M. Kosolapoff

1. DUKAR. I. I.; KRASTIN., E. E.; BRYUSHKOV., V. ...

2. USSR (600)

4. Plants, effect of Acids on; Sunflowers

7. Effect of 2, 4-dichlorophenoxyacetic acid on sunflower metabolism at differnt
    temperatures. Dokl. AN SSSR 84 No. 1, 1952.
    Moskovskaya Sel'skokhozyaystvennaya Akademiya im. K. A. Temiryazeva

9. <u>Monthly List of Russian Accessions</u>. Library of Congress, September 1952, UNCLASSI*
    fied. Rcd. 4 March 1952

GUNAR, I. I. and KRASTINA, Ye. Ye.

"Physiology and Biochemistry of the Phasid Development of Spring Wheat," Dokl. AN SSSR, 86, No.1, 1952

VASIL'YEV, Ivan Mitrofanovich; GUMAR, I.I., redaktor.

[Winter hardiness of plants] Zimostoikost' rastenii. Moskva, Izd-vo
Akademii nauk SSSR, 1953. 190 p.   (MLRA 7:1)
                        (Plants--Frost resistance)

1. GUNAR, I. I., KRASTINA, Ye. Ye.

2. USSR (600)

4. Vernalization

7. Length of vernalization in winter wheat in relation to the phase of development.
    Agrobiologiya, No. 1, 1953.

9. **Monthly** **List** **of** **Russian** **Accessions**, Library of Congress, _____May_____ 1953. Unclassified.

GUNAR, I. I.

(General meeting of members of the Moscow Department of the All-Union Botanical Society.)
A paper was read by the director of the chair of plant physiology of the Agricultural
Academy imeni K. A. Timiryazev I. I. GUNAR, entitled "The Problem of Irritability
of Plants," which evoked an animated discussion..
  SO: Vestnik Akademii Nauk SSSR, No.4, April 1953, pp. 96-97   See SRI

GUNAR,I.I.; SILEVA,M.N.

Sugar changes in winter wheat during the process of hardening.
Fiziol.rast. 1 no.2:141-145 N-D '54.   (MLRA 8:10)

1. Kafedra fiziologii rasteniy Moskovskoy sel'skokhozyaystvennoy
akademii imeni K.A.Timiryazeva
                (Wheat) (Plants--Metabolism)

GUNAR, I.I.

BASLAVSKAYA,S.S.; GUNAR,I.I.; TRUBETSKOVA,O.M.

"Plant physiology." B.A.Rubin. Reviewed by S.S.Baslavskaia, I.I.Gunar,
O.M.Trubetskova. Fiziol.rast.2 no.3:307-310 My-Je '55. (MLRA 8:11)
(Botany--Physiology) (Rubin,B.A.)

GUNAR, I.I.

Chemical weeding. IUn.nat.no.1:36-37 Ap '56. (MIRA 9:9)

1.Zaveduyushchiy kafedroy fiziologii rasteniy Akademii imeni
K.A.Timiryazeva.
                    (Herbicides)

CATEGORY   CULTIVATED PLANTS. Grains. Legumbous Grains.
                 Tropical Cereals.
ABS. JOUR.   REF ZHUR - BIOLOGIYA, NO. 4, 1959, No. 15620

AUTHOR   Gunar, I.I.; Krastina, Ye.Ye.
INST.   Moscow Agric. Academy im. K.A. Timiryazev
TITLE   Reaction of Corn to Temperature Conditions

ORIG. PUB.   V sb.: Kul'tura kukuruzy v SSSR, M., "Sov.
             nauka", 1957, 12-15

ABSTRACT   An experiment was conducted in the artificial
             climate laboratory of the Timiryazev
             Agricultural Academy in testing a series of
             methods of acting on the Minnesota   13 corn
             seeds for the purpose of raising the plant's
             resistance to cold. Lowering of corn germina-
             tion as compared to control plants was
             observed in all experiment variations at all
             temperatures. Cold hardening of the seeds
             had a positive effect on corn plant resistance

CARD: 1/2

ABSTRACT   .to temperature lowering in the two-leaf phase,
             but under the conditions of sowing hardened
             seeds in warm soil. Any action on the corn
             seed which stimulates   the seed   drast-
             ically reduces plant germination after
             temporary cooling of the soil. Heating of
             the seed had almost no effect on germination,
             growth and development of corn.
             -- A.F. Khlystova

CARD: 2/2

USSR/Cultivated Plants - Grains.   M.

Abs Jour   : Ref Zhur - Biol., No 4, 1958, 15543

Author   : I.I. Gunar, Ye.Ye. Krastina
Inst   : ──────────────
Title   : The Effect of the Pre-Sowing Processing of the Seeds on
               Corn Development.
               (Vliyaniye predposevnoy obrabotki semyan na razvitiye
               kukuruzy).

Orig Pub   : Kukuruza, 1957, No 1, 21-25.

Abstract   : In the artificial climate laboratories of the K.A.
               Timiryazev Agricultural Academy the pre-sowing proces-
               sing of corn seeds by lowered temperatures increased
               the cold resistance somewhat, although it afflicted
               the germination of the seeds, particularly when planted
               in cold ground. The pre-sowing seed processing through
               alternating temperatures (according to Voronova's me-
               thod) had a positive effect on plant growth in some

Card 1/2

3/

GUNAR, I.I.

USSR/Cultivated Plants - Grains   M-4

Abs Jour : Ref Zhur - Biol., No 1, 1958, No 1511

Author   : I.I. Gunar, Ye.Ye. Krastina
Inst   : Moscow Order of Lenin Agricultural Academy imeni K.A. Timiryazev
Title   : The Distribution of Phosphorus in Corn

Orig Pub : Kukuruza, 1957, No 3, 44-46

Abstract : The experiment was conducted in the TSKhA /Mosocw "order of
           Lenin" Agricultural Academy imeni K.A. Timiryazev/ artificial
           climate laboratory in 1952 by the marked atom technique. The
           formation of the organs of fruitbearing greatly influences the
           distribution of P in the plant. During the projection and
           florescence of the panicle, the inflow of P into the upper
           part and corn panicle occurs. After the blossoming of the pan-
           icle, the inflow of P is observed in the site of the formation
           of the cob. The hypothesis is expressed that the castration
           of the corn favorably influences its development, inasmuch as
           the feeding matter reaches the cob at an earlier stage.

Card   : 1/1

USSR/Plant Physiology

Abs Jour   : Ref Zhur Biol., No 12, 1958, 53293

Author   : Gunar, I.I., Krastina, Ye.Ye., Petrov-Spiridonov, A.Ye.,

Inst   : Timiryazev Agricultural Academy

Title   : Rhythmicity of the Absorption and Excretion Activities
             in Roots.

Orig Pub   : Izv. Timiryazevsk. s.-kh. akad., 1957, No 4, 181-206

Abstract   : A study was made of the daily and impulse rhythm in the
             root activity of the sunflower, kidney bean, tomato,
             squash, and other plants cultivated in Knop's nutritive
             solution. The transpiration rate in the plants was de-
             termined by the amount of released sap. The P and S in
             the sap was determined by the method of isotope analysis,
             and K, Ca, and nitrates by the polarographic method.
             A daily periodicity in the rate of transpiration was

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USSR/Plant Physiology - Mineral Nutrition.   I

Abs Jour   : Ref Zhur Biol., No 12, 1958, 53293

          detected in plants cultivated under alternating condi-
          tions of light and darkness for a twenty-four hour inter-
          val, and it was not observed with constant exposure to
          light. A rhythmicity was also noted in the absorption
          of the investigated ions by the root system: it was con-
          siderably higher in the daytime than at night. A study
          of the release of ions from the sap also revealed a daily
          rhythm: the sulfate and phosphate concentration was
          higher in the daytime, but the concentration of nitrates
          was lower than at night. Moreover, a rhythmicity for pe-
          riods of several hours was observed in the absorption of
          ions. Alternation of absorption and excretion of a defin-
          ite ion by the plant roots is regarded by the authors as
          a successive exchange of periods of stimulation and sup-
          pression in the activity of the roots with a constant irr-
          itant. This was confirmed by the presence of pulsation
          periods of 15 - 30 minutes observed in the determination

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USSR/Plant Physiology - Mineral Nutrition.

Abs Jour   : Ref Zhur Biol., No 12, 1958, 53293

          of the transpiration rate and the secretion of phospha-
          tes and sulfates with the sap, and also the opposite
          changes in absorption and excretion of K and Ca. --
          N.G. Zhirnova

Card 3/3

GUNAR, I. I.